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Content

Abstract:

Due to a limited Welfare State, inequalities of income in Switzerland are comparatively high in European comparison. Moreover, these income inequalities have a very strong spatial dimension. Wealth and poverty concentrate in the major metropolitan areas of the county, displaying complex patterns of city-suburb disparities. As the proportions of people and activities in urban areas increase, metropolitan inequalities become a new challenge for the democratic Welfare State. Against this background, the paper examines place equality regimes in seven large metropolitan areas in Switzerland. First we assess spatial disparities within and across the metropolitan areas under scrutiny. Second we examine regional differences in government policies to address spatial and social inequalities, showing that fiscal equalisation as well as social policies are the two main vectors for such policies. Third, we examine place equality regimes across the seven metropolitan areas, focusing on the distribution of municipal revenues and expenditures within them. We find a strong correlation between inequality patterns in resident wealth on the one hand, and inequality patterns in municipal revenues and expenditures on the other hand. However, while core-cities seem to be provided with financial resources that are commensurate with high levels of social hardship, this is not the case for poor suburbs. In poor suburbs, the low share of redistributive expenditures in the municipal budget is striking. Our evidence suggest that this situation is linked to the political ecology of the metropolis, where right-wing political preferences in poor suburbs lead to limited social policy engagement by the municipal government.

1 Introduction [1]

Switzerland has the reputation of being one of the wealthiest countries in the world. Indeed, in terms of per capita gross domestic product (GDP), Switzerland has consistently ranked among the top four OECD countries (usually after Luxemburg, Norway and the United States) and well above the EU 27 average. Inequalities of income from paid work are comparatively low in Switzerland. The latest available OECD figures[2] show that income inequality in the general population in Switzerland is among the lowest in the OECD. The Gini coefficient before taxes and transfers is 0.409, denoting that income inequality in Switzerland is well below the OECD average (0.467) and also much lower than in the neighbouring countries (Austria: 0.472; France: 0.483; Germany: 0.504; Italy: 0.534). However, in comparison to other OECD countries, the redistributive effect of the Swiss welfare state is limited. Indeed, the Gini coefficient of income inequality in the general population *after* taxes and transfers is 0.303, thus very close to the OECD average (0.314), and well above the figure for the neighbouring countries (Austria: 0.261; France: 0.293; Germany: 0.295) except Italy (0.337). In addition, the distribution of income after taxes and transfers has become more unequal in Switzerland in the last decade (the Gini coefficient rose from 0.279 in 2000 to 0.303 in 2009), contrary to the general trend of stable or even decreasing inequality in most other OECD countries. Hence, if we look at the disposable income in the general population, the picture that Switzerland gives is one of a rather unequal society in the European context.

The distribution of income and wealth has a very clear spatial dimension in Switzerland. While the industrialisation in the 19th century was relatively decentralised, the territorial differentiation of various economic sectors has increased since World War II. With the gradual shifts towards a tertiarised economy, businesses, jobs and production have concentrated in the major cities of the Swiss plateau. As a consequence, regional disparities have increased. There are quite substantial differences in per capita income across the 26 cantons - the federate states - of the Swiss federation. In a small number of cantons located within the three economic powerhouses of the national economy - the Zurich, Basle as well as the Geneva-Lausanne metropolitan regions - per

[1] This paper is based on research conducted for the project *Cleavages, governance and the media in European metropolitan areas*, financed by the National Centre of Competence in Research *Challenges to Democracy in the 21st Century* at the University of Zurich. Previous versions of the paper have been presented at the workshop "Metropolitan governance and social inequality in a global perspective" in at the University of Southern California in January 2009, as well as the APSA 2009 annual meeting 2009 in Toronto.

capita GDP is well above the national average, while it is significantly lower in most other cantons. The latest available figures show that per capita GDP in the most wealthy and highly urbanised canton (Basle-city) exceeds by more than three times the one of the two poorest, peripheral cantons (Jura and Valais).[3] However, these three metropolitan regions are also the places where poverty concentrates: levels of unemployment as well as the share of residents on social welfare are significantly higher than in the rest of the country. These disparities have remained fairly stable over the last decade (see Bundesamt für Statistik, 2012).

Compared to the rest of the country, the major Swiss metropolitan areas are thus simultaneously places of affluence and dearth. Against this background, the goal of this paper is to explore the link between spatial inequalities and governance in Swiss metropolitan areas. More precisely, we aim to understand regimes of place equality in Swiss metropolitan areas. Drawing on the research agenda outlined by the International Metropolitan Observatory (IMO), our overall aim is to show to what extent public policies set up in metropolitan places can be seen to be conditioned by structural determinants – thus reinforcing spatial inequalities – or, to the contrary, must be viewed as a response to problems – thus alleviating these inequalities. To put it in other words, the objective is to establish whether policy choices of metropolitan places merely reflect the socio-economic differences found among them, or whether they express some kind of voluntarism aimed at acting upon these differences. Therefore, we are especially interested in singling out the importance of socio-economic variables with respect to political variables for the explanation of variation in government expenditures across municipalities in Swiss metropolitan areas.

We start with a presentation of spatial patterns of social inequalities in Swiss metropolitan and summarise the findings in a five-fold typology of municipalities within metropolitan areas. The next section focuses on government policies addressing spatial and social inequalities in Switzerland. This section involves an account on cantonal differences of the Welfare State and distinguishes a number of regimes that differ with respect to how spatial inequalities are treated. The next section turns to patterns of inequalities in metropolitan areas and examines public finance data, focusing particularly on spatial inequalities of expenditure for redistributive policies. The conclusion wraps up the findings and discusses their implications, both for understanding local politics in Switzerland and for the *problématique* raised by the IMO

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2 See http://stats.oecd.org, accessed June 2012.

3 Numbers for 2005. Source: Swiss Statistical Office (http://www.bfs.admin.ch, accessed June 2012).

programme. Technical details on data and variables used in the analysis are given in the appendix.

2 Metropolitanization and spatial patterns of social inequalities

During the 20th century, Switzerland has been profoundly transformed by a still ongoing process of metropolitanization. This process has revealed a metamorphosis of relevant elements of urban centrality (see Leresche et al., 1995, Cunha and Schuler, 2001, Bassand, 2005). Externally, metropolitanization involves the connection to a global order of inter-urban networks. Internally, it has led to a recomposition of the urban space, in the sense that metropolitan areas[4] are nowadays the dominant form of human settlement in Switzerland. These metropolitan areas are increasingly functionally integrated, mainly thanks to the development of high capacity transport infrastructure. Spatial mobility of goods and persons allows an increasing functional specialization of soil, leading not only to accelerated urban sprawl and further expansion of metropolitan areas, but in the same time to social segregation within them. As others (Huissoud et al., 1999, Cunha et al., 1998) and ourselves (Kübler and Scheuss, 2005) have shown, Swiss metropolitan areas are increasingly segregated. As elsewhere, social inequalities translate into spatial inequalities in Swiss metropolitan areas.

Table 1: Characteristics of Swiss metropolitan areas under scrutiny (data for 2000)

Metropolitan area	Overall population	Overall number of municipalities	Index of geopolitical fragmentation
Zurich	1,080,728	132	3.6
Basle	731,167	127	4.4*
Geneva	645,608	131	4.2*
Berne	349,096	43	3.3
Lausanne	311,441	70	5.6
Lucerne	196,550	17	2.9
Lugano	136,032	77	27.1*

* excluding foreign communes in cross-border metropolitan areas

Among the roundabout 50 metropolitan areas delimited in the latest available official definition (Schuler et al., 2005), seven have a population close to or more than 200'000 inhabitants and were included in the analysis conducted for the International Metropolitan Observatory Project in Switzerland (Kübler and Scheuss, 2005, Kübler et al., in press). These are the metropolitan areas

[4] The notion of metropolitan area originates in the US Census Bureau's terminology used to define areas of functionally integrated urban settlements spread over different administrative boundaries. The official nomenclature of territorial statistics used by the Swiss Statistical Office uses the term of *agglomerations* (in German: Agglomerationen; in French: agglomérations; in Italian: agglomerati). They are conceptually equivalent to the US Metropolitan Areas (Schuler, 1999: 334-340). Throughout this text, we will use the term 'metropolitan areas' as a synonym of *agglomerations*.

of Zurich, Basle, Geneva, Berne, Lausanne, Lucerne and Lugano (Table 1). They cover the territory of 482 municipalities[5] and total roundabout 3 million inhabitants, which represents almost 60% of the country's urban population.

In Swiss metropolitan areas roughly two thirds of the overall population live in the suburban area outside the core city. The suburban area is usually characterized by a large number of rather small local governments. Consequently, geopolitical fragmentation (Zeigler and Brunn, 1980) in Swiss metropolitan areas is one of the highest in the world (Hoffmann-Martinot and Sellers, 2005).

In order to describe social inequalities within metropolitan areas, the IMO research network has constructed a typology of municipalities. The typology distinguishes between urban concentrations, poor suburbs, middle class suburbs, affluent suburbs and low density suburbs. Table 2 provides an overview of the typology regarding some distinctive socio-economic and morphological characteristics. Two indicators for social disparities can be considered here. First, on the lower end, so to speak, the measure of socio-economic hardship shows that the urban concentrations present the highest level of socio-economic hardship. They are even more distressed than the poor suburbs which come next. No clear distinction can be made between middle class suburbs and low density suburbs. The lowest levels of socio-economic hardship are found in affluent communes. Second, at the upper end of the socio-economic strata, the per capita amount of federal income tax on residents shows more or less the reverse pattern. Per capita income tax is highest in affluent enclaves - where people with the highest income live. Low density suburbs are still clearly above average, while middle class suburbs are roughly on average, urban concentrations and poor suburbs clearly below average. This pattern was stable over the last decades, as can be seen from the comparison of income tax numbers for 2001 and 2008. Taken together, it appears that social disparities in Swiss metropolitan areas do not follow a pattern of polarisation between the core city and its suburbs, but between the core city and the poor suburbs on the one hand, and the middle class, affluent, and low density suburbs on the other hand.

[5] This number does not include the municipalities of international metropolitan areas (Basle and Geneva) located outside of Switzerland.

Table 2: Typology of communes in Swiss metropolitan areas (data for 2000)

Type of commune (N)	Population	Foreign born (%)	Distance from centre (km)	New housing (%)[3]	Hardship index Mean	Per capita income tax (2000)	Per capita income tax (2008)
Overall (482)	**3,009,237**	**21.7**	**11.8**	**32.7**	**35.0**	**1457**	**2116**
Urban concentration (7)	1,047,399	35.2	-	10.8	57.3	970	1437
Poor suburbs (119)	952,162	29.1	9.7	27.1	50.6	828	1158
Middle class suburbs (119)	502,624	21.1	9.6	27.1	35.5	1377	2131
Affluent suburbs (119)	274,148	18.3	9.5	33.4	24.5	2101	3054
Low density suburbs (118)	232,904	17.7	19.0	44.5	28.1	1561	2155

Yet, socio-economic differentiation across communal types within single metropolitan areas is only one aspect of metropolitan social inequalities in Switzerland. There are also differences between the seven metropolitan areas under scrutiny when we look at the distribution of poverty and wealth across the municipalities within metropolitan areas (Table 3).

Table 3: Social disparities across Swiss metropolitan areas (data for 2000)

Metropolitan area	Hardship Standard Deviation	SES Standard Deviation	Gini coefficient of per capita income tax revenues (2000)
Zurich*	10.8	11.8	0.35249
Basle*	11.6	12.2	0.24288
Geneva*	13.1	14.2	0.33384
Berne	8.3	9.5	0.22250
Lausanne	13.5	14.4	0.36512
Lucerne	12.1	8.5	0.26463
Lugano*	12.3	10.0	0.26830
Mean	11.6	11.5	0.29282

* excluding foreign communes in cross-border metropolitan areas

If we look at the standard deviation of the indicator value for socio-economic hardship, we see that the hardship is particularly variegated in the Geneva, Lausanne, Lugano and Lucerne metropolitan areas. The standard deviation of the index value for general socio-economic-status shows that the distribution of the proportions of residents with high socio-economic status is particularly uneven in Lausanne, Geneva, Basle and Zurich. This picture of varying patterns of social inequalities across metropolitan areas is also confirmed by the Gini coefficients for the per capita amount of federal income tax paid by residents in metropolitan municipalities - which can

be taken as a good proxy for average income, even though the progressive nature of the federal income tax may lead to an overestimation of income at the higher end of the spectrum. In the metropolitan areas of Lausanne, Zurich and Geneva, inequality of income between municipalities is substantially higher than in the metropolitan areas of Lugano, Lucerne, Basle and Berne.

3. Government policies to address spatial and social inequalities in Switzerland

In the Swiss federation, there are three levels of government: the federation, twenty-six federate states - the so-called 'cantons' - and roughly 2600 municipalities - called 'communes'. The federal constitution clearly states that legal competences first and foremost reside within the cantons. Their consent is necessary when part of their sovereignty is transferred to the federal level. Hence, any transfer of competences from the cantons to the federation requires a change of the constitution. The federal government has no direct implementing capacity in its domains of competence; implementation of federal policies is left to the cantons and the communes, whereby the cantons act as intermediary between the federal government and the communes. Accordingly, intergovernmental relations between state levels in Switzerland are characterized by a traditionally strong position of the cantons. Communes, as autonomous bodies of the lowest state level, are mentioned in the federal constitution, even though the precise definition of their status is relegated to the cantons. Communes therefore have no original powers granted to them constitutionally, but both the organization of communal institutions and the degree of communal autonomy are subject to cantonal legislation. There is thus no unified 'Swiss' system of local government but rather twenty-six different cantonal systems of local government whose autonomy varies strongly. But in general, and compared to other federations, communal autonomy is quite high in Switzerland. In Sellers and Lidström's (2007) typology of local government systems, combining the local government capacity (in terms of resources) and local government supervision (imposed by higher-level authorities), Switzerland is classified in the centre of the spectrum (Sellers and Lidstrom, 2007: 621): local government capacity is qualified as medium, and supervision of local government by higher levels is rather limited.

3.1 Addressing spatial inequalities

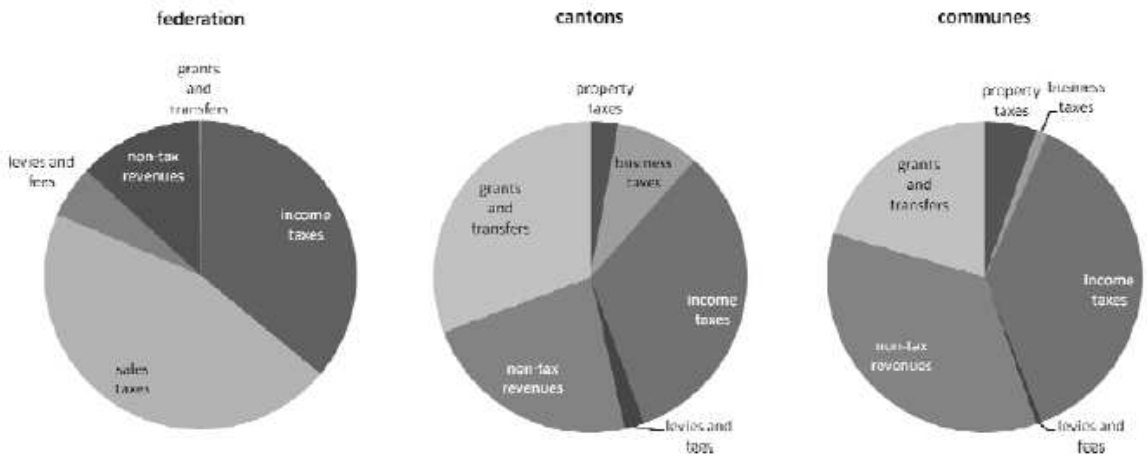
Traditionally, federal policy programmes to address spatial inequalities in Switzerland have first and foremost concerned peripheral regions, not metropolitan areas. In the wake of the so-called "regional policy", formulated and implemented since the 1970s, important subsidies have been

allocated to economically weak peripheral regions in the mountain areas of the country, in order to improve transport infrastructure and accessibility, to strengthen specific economic sectors (e.g. agriculture, forestry or tourism), but also with the aim to make remote places more liveable for their inhabitants (e.g. via investments in public works such as town halls, etc.). It was only at the turn of the millennium that the federal government started to formulate a regional development policy also for the urban areas of the country (see Kübler, 2007a, Scheuss and Kübler, 2007). For the time being, this "metropolitan area policy" (*Agglomerationspolitik*) of the federal government remains geared essentially towards improving transport infrastructure in large metropolitan areas, and is basically aimed at containing further urban sprawl by the promotion of infill development and densification.

a) Fiscal equalisation

Except for the specific case of peripheral mountain regions, fiscal policy therefore remains the main vector of government activity by which spatial inequalities are explicitly addressed in Swiss federalism. The rationale for this becomes clear especially when we consider the considerable fiscal autonomy of jurisdictions at each state level. The total revenues of the federal state amount to roughly one third of overall government revenues indicating a strong decentralisation of fiscal resources. This fiscal decentralisation is mostly in favour of the cantons: the share of the cantons in the share of government revenues represents about 40 percent. The share of the communes in the overall government revenue in Switzerland is roughly 25 percent.

Figure 1: Sources of government revenue at each state level



Source: Federal Finance Administration 2008

Yet, the importance of the different sources of revenues varies across state levels (Figure 1). *Self-generated* revenues constitute practically the entire income of the federal state, whereas *grants and transfers* represent substantial financial resources for cantons and communes. *Sales taxes* (VAT, taxes on alcohol, cigarettes, energy, etc.) are a prerogative of the federal government and correspond to its most important revenue source besides income taxes. After that, the federal state's share of *levies and fees* is also important and amounts to about two thirds. However, the absolute amount of revenues generated by levies and fees is relatively small, which is also true for *non-tax revenues*. However, non-tax revenues, mostly from *user charges* and *capital income*, are important revenue sources for both cantons and communes and correspond to around 40 percent of the overall non-tax revenues respectively.

As regards self-generated revenues of cantons and communes the figures indicate that *direct taxes* represent the most important revenue source. Indeed, governments at all three state levels are entitled to levy direct taxes on income and assets of physical and legal persons, as well as property taxes. In addition, cantons and communes can set their own tax rate, i.e. decide about the proportion of income and assets that is due as tax. This has sparked fiscal competition between cantons, but also between communes within cantons. Fiscal competition at the subnational level is, by the way, considered as one characteristic feature of Swiss federalism in the internationally comparative literature on federal fiscal regimes (Braun, 2003). It has led to substantial fiscal disparities between cantons, as well as between municipalities within cantons. In order to compensate the most striking differences, systems of fiscal equalisation have been set up at the federal level and in most cantons, thereby ensuring a certain redistribution of fiscal resources between rich and poor cantons, as well as between rich and poor communes within cantons.

With respect to cantonal equalisation regimes, it needs to be emphasised that these regimes vary in the extent to which they redistribute fiscal resources from rich to poor communes.

b) Horizontal inter-communal cooperation

Besides fiscal equalisation, another crucial ingredient of place equality regimes in metropolitan areas relates to intergovernmental cooperation at the communal level. Indeed, policy-making in Swiss federalism is characterised by a high degree of *politikverflechtung* (Schenkel and Serdült, 2006) - even if this phenomenon has not yet reached the same extent as in Germany (see Scharpf, 1994). The term of *politikverflechtung* describes a situation where government activities are formally conducted by separate bodies with clearly designated competencies (i.e. the federal

government, the cantonal government as well as communal governments), but the activities of each are closely tied together in practice. A striking case of such intergovernmental entanglements are the many schemes of inter-communal cooperation, which are found in all Swiss metropolitan areas. Mostly in order to realise scale economies or to facilitate management of supra-local infrastructure, communes in metropolitan areas have joined numerous cooperation schemes, particularly in the fields of culture, energy supply, waste disposal, social policy, security and justice, as well as transportation (Arn and Friederich, 1994). When a commune joins such cooperation schemes, it thereby reduces its possibility to autonomously influence government output in the policy fields concerned by these schemes. Delegation of policy-making to intergovernmental schemes must therefore also be seen as a substantial vector for spatial equalisation of government output.

Horizontal cooperation between municipalities is difficult to measure. However, horizontal transfer payments represent a valuable proxy for horizontal cooperation between municipalities in a given metropolitan area. (Table 4). The results suggest that horizontal entanglement resulting from intermunicipal cooperation is lowest in Geneva, followed by Zurich and Lucerne. In Lausanne, Basle and Berne however, horizontal entanglement is rather high.

Table 4: Inter-communal cooperation across metropolitan areas (measured by horizontal transfer payments at the communal level, data for 2000)

	Communes with data / total communes	Total transfer payments per capita (means in 1000 CHF)	Total transfer payments by sum of revenues and expenditures (means in percent)	Index of intercommunal cooperation (sum of z. values)
Zurich	29 / 132	1.46	19.7	0.33
Basle	69 / 74	1.71	22.3	-0.55
Geneva	74 / 74	1.25	15.6	0.92
Berne	3 / 43	2.56	27.4	-1.76
Lausanne	70 / 70	1.77	20.8	-0.43
Lucerne	15 / 17	1.54	19.2	0.08
Lugano	0 / 72	n.a.	n.a.	n.a.
Overall	260 / 482	1.57	53.2	0.02

3.2 Redistributive policies: the Welfare State in Switzerland

With respect to Esping-Andersen's (1990) well-known typology, Switzerland has often been considered to correspond to the liberal welfare state model with a very limited redistributive effect, covering only a very reduced range of social risks and keeping social expenditures low. Recent developments notably in the field of family policy (see Kübler, 2007b) have however increasingly challenged this classification. Today, scholars of Swiss social policy generally agree

that the underlying welfare state model is the conservative one. It is characterised by quite a comprehensive system of social insurance schemes in the fields of old age, disability, health and unemployment, but provides less good coverage of "new social risks" (Bonoli, 2004b) such as the reconciliation of work and family life, or the changing skills required by the labour market as a consequence of the transition towards the knowledge economy. The Swiss Welfare state simply developed at a much slower pace than what was the case in comparable countries - e.g. France and Germany - mainly as a consequence of the institutional veto points provided by direct democracy and federalism that slowed down decision-making processes (Bonoli, 2006). At present the share of social expenditures (22.13% of GDP in the year 2005)[6] in Switzerland is comparable to most other European countries (see also Bonoli, 2004a). However, as the comparison of Gini coefficients of income before and after taxation and transfer shows (see the introduction), the redistributive effect of the Swiss welfare state still remains quite limited.

In a study on the sub-national welfare state in Switzerland, Armingeon at al. (2004) have shown that Swiss federalism leaves much room for cantons to shape their own welfare regime. Focusing on employment, social security, education and taxation policies, they were able to identify strong differences in cantonal welfare regimes that echo the classification made by Esping-Andersen at the internationally comparative level. Most relevant for the topic treated in this paper, they show that "worlds of welfare" differ between cantons when it comes to social security and taxation policies. More precisely, they found that cantonal social policies vary across cantons notably in terms of risk coverage and generosity, and that cantonal tax regimes vary across cantons in terms of tax load and progressivity.

All three state levels - federal, cantonal and communal - play an important though differential role in social policy in Switzerland. More than half of the total social expenditures are distributed by the federal government. But cantons and communes retain important roles in many other fields of social policy. In 2004, the federal government was responsible for 55.2% of overall social expenditures (mainly via the social insurances, i.e. old age insurance, disability insurance, unemployment insurances and health care), the 26 cantons account for 28.9% of expenditures and the municipalities for 15.8%.[7] This concerns mostly the field of social assistance, i.e. means-tested benefits to low income households, where cantons and communes are much more involved than the federation. Finally, communes are the major player when it comes to areas such as youth

[6] Source: BSV, Schweizerische Sozialversicherungsstatistik 2007.
[7] Source: BSV, Schweizerische Sozialversicherungsstatistik 2007.

protection, and especially homes for the elderly. Interestingly, communal engagement in social housing is only minimal, denoting the fact that Switzerland has no strong social housing policy. In terms of volume, social assistance clearly remains the main vector for social policies at the local level in Switzerland.

Table 5: Cantonal welfare regimes across metropolitan areas

Metropolitan area	Total communes*	Cantons with communes	Social expenditures per capita in cantons (in CHF, 1999)	Decentralisation of social expenditures (share of communes, 1999)	Index of tax effort (2000)
Zurich	132	ZH: 104	2,019.70	58.6%	83.3
		AG: 25	934.40	44.5%	96.5
		SZ: 3	1,155.20	64.0%	75.3
Basle	74	BS: 3	2,878.20	2.7%	111.3
		BL: 52	1,288.70	45.2%	91.1
		SO: 11	1,156.30	48.8%	100.1
		AG: 8	934.40	44.5%	96.5
Geneva	74	GE: 42	3,064.00	9.2%	103.8
		VD:32	1,672.80	30.3%	109.8
Berne	43	BE: 40	1,493.80	55.6%	124.2
		FR: 3	897.70	41.5%	116.4
Lausanne	70	VD: 70	1,672.80	30.3%	109.8
Lucerne	17	LU: 15	1,330.40	61.4%	117.0
		NW: 1	853.10	38.6%	71.1
Lugano	72	TI: 72	1,578.60	28.3%	90.4
National mean			1,554.30	43.0%	100.0

* excluding foreign communes in cross-border metropolitan areas
cantons: AG: Aargau, BE: Berne, BL: Basle countryside, BS: Basle city, FR: Fribourg, GE: Geneva, LU: Lucerne, NW: Nidwalden, SO: Solothurn, SZ: Schwyz, TI: Ticino, VD: Vaud
Source: Badac

Table 5 gives an idea of the cantonal social policy profiles that provide the context for government action in the field of social inequalities within these metropolitan areas. On the one hand, these profiles differ regarding the extent of per capita expenditures in the field of social security (cantonal and communal expenditures are taken together). Per capita expenditures are highest in the canton of Geneva (GE), closely followed by the canton of Basle city (BS), and Zurich (ZH) at some distance. However, while the Geneva cantonal context can be assumed to be highly relevant to social policy in the metropolitan area of Geneva, most of the Basle metropolitan area is in fact located in the canton of Basle countryside (BL), where per capital social expenditures are significantly lower than in Basle city (BS). At the lower end, we find Berne, Lugano, Lausanne and Lucerne, where social expenditures per capita in the relevant cantonal context are even below the national mean. On the other hand, significant differences are also to be noted when it comes to the degree of decentralisation, i.e. the communal share in the overall social expenditures. Again, Geneva stands out with the lowest degree of social policy

decentralisation (only 9.2% of social expenditures in the canton of Geneva are made by the communes). Berne (BE), Zurich (ZH) and especially Lucerne (LU) are found at the other end, with a large communal share in the overall social expenditures.

Following Armingeon et al. (2004) we consider that, besides the level of social expenditures, the taxation regime is also an important aspect of the welfare state. Indeed, the taxation regime has important redistributive effects inasmuch as it determines how much money the state extracts from taxpayers in order to fund the production of public goods. In terms of tax effort[8], tax regimes vary quite substantially across metropolitan areas (Table 5). In Berne, Lucerne, Lausanne and Geneva, taxpayers pay more taxes than in the national average. In Basle, Lugano and especially Zurich, taxpayers pay less than average.

These results on two important aspects of "cantonal worlds of welfare" suggest that there are four configurations into which Swiss metropolitan areas under scrutiny can be classified. First, high social expenditures and high tax effort denotes a situation where the state is strongly and consciously engaged in redistribution. This situation is found in the case of Geneva - at least for those communes of the Geneva metropolitan area that are located in the canton of Geneva. This probably comes closest to what Esping-Andersen had in mind when speaking of the "social democratic" welfare state. Second, and in contrast to the preceding, a combination of low social expenditures with low fiscal load - found in Basle and Lugano - means that the state is only weakly involved in redistributive policies. This comes close to Esping-Andersen's "liberal welfare" regime. The third configuration, high social expenditures and low fiscal load suggests that while social policy is extensive, this is basically made possible because of a favourable tax base, where a considerable volume of tax income stems from businesses and wealthy residents, thereby limiting the overall fiscal load. This hybrid configuration, found in Zurich, could be termed a "liberal redistributive" welfare regime. Finally, a configuration where high fiscal load combines with low social expenditures - found in Berne, Lausanne and Lucerne - is difficult to assess in terms of welfare regime. While the low level of social expenditures can be seen to result from a conscious effort to limit social policy expansion, the reason for the high fiscal load remains unclear. If it is mainly the result of an unfavourable tax base - all three of these metropolitan areas have a weak economic structure - the welfare regime could be termed "would-

[8] The index of tax effort (*Steuerbelastung*) is calculated by the team of the BADAC in Lausanne and reunites indices of the tax load (income and assets) on natural persons, businesses and cars (see: www.badac.ch, table Csi 10.12).

be liberal". But if high levels of taxation are a conscious means of policy, we then could speak of a "liberal-conservative" welfare regime where the role of the state is not per se denied.

4. Place equality regimes in Swiss metropolitan areas

Welfare regimes vary across cantons in Switzerland, and we can assume that this also parallels variations in government engagement for reducing social inequalities across metropolitan areas in Switzerland. We will now turn to examining these place equality regimes. We will, first, look at the spatial distribution of overall municipal revenues and expenditures, and second, at the spatial distribution of particular expenditures for different policy domains.

4.1 Spatial inequalities in overall municipal revenues and expenditures

A comparison of metropolitan area-level Gini coefficients (unweighted and population-weighted) on municipal public finance in the metropolitan areas under scrutiny allows a first assessment of the spatial distribution of municipal resources (Table 6).

Table 6: Spatial distribution of municipal revenues and expenditures in Swiss metropolitan areas (data for 2000)[9]

Metropolitan area (canton)	Gini coefficients			
	Total revenues	Total revenues weighted	Total expenditures	Total expenditures weighted
Zurich*	0.270	0.257	0.299	0.284
Basle (Basle countryside)*	0.078	0.026	0.070	0.010
Geneva*	0.156	0.155	0.135	0.161
Berne 2002*	0.103	0.165	0.107	0.165
Lausanne (Vaud) 2000	0.159	0.210	0.157	0.216
Lausanne (Vaud) 2002	0.155	0.185	0.147	0.197
Lucerne	0.129	0.164	0.107	0.136
Lugano (Ticino)*	n.a.	n.a.	n.a.	n.a.

* excluding extra-cantonal communes in cross-border metropolitan areas.
Note that the figures only refer to the communes within the canton comprising the largest portion of the metropolitan area. If the name of the canton is different from that of the metropolitan area it is indicated in brackets

Except for the metropolitan areas of Zurich and Basle the unweighted Gini coefficients vary between 0.10 and 0.16 for both total revenues and total expenditures. As regards population weighted Gini coefficients the values are generally higher and vary between 0.50 and 0.22; this reflects higher municipal revenues in the core cities (thus increasing concentration on one municipality). In general the Gini coefficients for revenues and expenditures are highly

correlated. This indicates that, in Swiss metropolitan areas, place-related inequalities in municipal revenues translate into inequalities in municipal resources and, hence, into inequalities of government expenditures per capita according to metropolitan municipalities. Nevertheless, the fact that the (unweighted) Gini coefficients for revenues normally exceed those for expenditures indicates a (slight) effect of fiscal equalisation mechanisms.

A comparison of the Gini coefficients on municipal revenues and expenditures (as displayed in Table 6) with the distribution of residents' wealth within the metropolitan area (as displayed in Table 3) allows to assess the degree to which the distribution of income among residents within a metropolitan area translates into inequalities in municipal finance. In terms of income inequalities among residents, the Gini coefficients for the different metropolitan areas show that these inequalities are above average in the metropolitan areas of Lausanne (0.365), Zurich (0.352) and Geneva (0.333), and below average in the metropolitan areas of Lugano (0.268), Lucerne (0.264), Basle (0.242) and Berne (0.222). These patterns are reflected in the spatial distribution of municipal revenues and expenditures: the values of the Gini coefficients show that the metropolitan area of Zurich displays the most important inequalities - both for revenues and for expenditures. In stark contrast, the Gini coefficients in the metropolitan area of Basle are very small and close to perfect equality for unweighted as well as for weighted index values. Yet, the Basle figures are probably an artefact as the core city of Basle is not being taken into account.[10]. The values of the unweighted Gini coefficients in the metropolitan areas of Berne and Lucerne are small. The weighted Gini coefficients, however, are similar to those of the metropolitan areas of Geneva and Lausanne in 2002. This suggests that the fiscal equalisation regimes in place in these metropolitan areas advantage core-cities. Finally, values of Gini coefficients in the metropolitan area of Lausanne in the canton of Vaud assess the effect of the introduction of a cantonal system of fiscal equalisation in 2001. Hence, not surprisingly, fiscal inequalities across communes are less important in 2002 than in 2000. Nevertheless, this reduction is only substantial if measured by the populatoin weighted Gini coefficient of total revenue distribution. Therefore the introduction of the fiscal equalisation regime in the canton of Vaud has, in the first

[9] For the canton of Berne we had to rely on communal data for the year 2002. Appropriate data is not available before this year. For the canton of Vaud we also calculated Gini indices for the year 2002 as the cantonal fiscal equalisation had been introduced in 2001. Unfortunately no data is available for the metropolitan area of Lugano.

[10] Basle city is a special case of a municipality which is at the same time a canton. Therefore, no data are available for municipal finance for the city of Basle. Using finance data of all communes of the metropolitan areas and the canton of Basle City this yields unweighted Gini coefficients for government revenues and expenditures of 0.141 and 0.152 and weighted Gini coefficients of 0.399 and 0.404 respectively (not reproduced in Table

place, brought about an equalisation between the city of Lausanne and the other communes, mostly in favour of the former.

The general finding for the Swiss metropolitan areas, thus, is that there is a high correlation between resident wealth, overall municipal revenues, as well as overall municipal expenditures. As such, this finding does not suffice to qualify the place equality regimes in Swiss metropolitan areas as problematic. A comparison between municipal revenues, expenditures and hardship index values across types of municipalities allows to shed further light on this issue (Table 7).

Table 7: Average total municpial revenues and expenditure (in CHF), hardship index (data for 2000, corrected for metropolitan area effect)

Types of municipalities	Revenues per capita	Expenditures per capita	Hardship index
Urban concentrations	6,887	5,585	57.3
Poor suburbs	4,136	3,126	50.6
Middle class suburbs	4,178	3,190	35.5
Affluent suburbs	4,198	3,027	24.5
Low density suburbs	4,065	2,948	28.1
Overall	**4,177**	**3,091**	**35.0**

It shows that a first distinction must be made between urban concentrations on the one hand, and the suburban municipalities on the other hand. In urban concentrations, resident wealth is inferior to all suburban municipalities except poor suburbs (as is shown above in Table 2); nevertheless, municipal revenues and expenditures are highest there (Table 7). Higher municipal revenues in urban concentrations result not only from equalisation schemes that generally benefit core cities within metropolitan areas, but probably also from business tax as businesses concentrate in core cities. Hence, it seems that place equality regimes in Swiss metropolitan areas provide core city governments with resources that are commensurate to addressing above average levels of social hardship. Second, looking at suburban municipalities, we see that per capita government revenues are similar across types of municipalities. This suggests that there is indeed an equalising effect of transfer regimes with respect to municipal revenues. Things are different at the expenditure side, however. Per capita municipal expenditures are highest in middle class suburbs, a little lower in poor suburbs, and substantially lower in affluent and low density suburbs. This is surprising given the level of hardship found across the suburban municipalities. If government

6).Consequently, this relatively high degree of fiscal inequality is mostly due to the congruence between the city and the canton of Basle.

expenditures were used to address hardship problems, they should be higher in poor suburbs - which is manifestly not the case.

4.2 Government expenditures of metropolitan municipalities in different policy fields

On what do municipal governments in Swiss metropolitan areas spend public money? And how are expenditures for different types of public services distributed within metropolitan areas? In order to examine this question, municipal expenditures in the metropolitan areas under scrutiny were classified according to the IMO protocol, distinguishing between the five following categories of municipal public expenditures: general administration, redistributive expenditures, amenities and other operational costs, as well developmental and capital expenditures (see **Fehler! Verweisquelle konnte nicht gefunden werden.** in the appendix).

Gini coefficients for these categories of municipal public expenditures were calculated for the seven metropolitan areas (Table 8). Echoing the previous finding regarding overall municipal revenues and expenditures, the measure of the spatial distribution of the various expenditure categories across the metropolitan areas shows that Zurich is clearly the most inegalitarian metropolitan area: population-weighted Gini coefficients are high for all expenditure categories except for general administrative expenditures.

Table 8: Inequality of categories of communal expenditures in Swiss metropolitan areas (data for 2000)

Metropolitan area	weighted Gini indices			
	general administration expenditures	redistributive expenditures	amenities and other operational costs	developmental and capital expenditures
Zurich*	0.011	0.245	0.220	0.415
Basle*	0.009	0.033	0.085	0.107
Geneva*	0.030	0.048	0.308	0.006
Berne	n.a.	n.a.	n.a.	n.a.
Lausanne	0.259	0.078	0.361	0.374
Lucerne	0.156	0.108	0.222	0.179
Lugano*	n.a.	n.a.	n.a.	n.a.

* excluding foreign communes in cross-border metropolitan areas

The situation in Basle is clearly more egalitarian - but, again, the figures do not include government expenditures of the core city. The Gini coefficients in Geneva are, except for amenities and other operational costs, also very small denoting low levels of spatial inequalities with respect to the various expenditure categories. In Lausanne and Lucerne, the dispersion of expenditures across municipalities is relatively high, except for redistributive expenditures.

How can these spatial distributions of expenditures in the various categories be explained? A first answer can be given by looking at the average share of expenditure categories in the overall municipal budget across types of metropolitan municipalities (Table 9).

Table 9: Average shares of local government spending on various functions 2000 (corrected for metropolitan area effect)

Type of municipalities (N)	General administration		Redistributive		Amenities and other operational costs		Developmental and capital expenditures	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Urban concentrations (4)	15.0	3.86	35.9	11.59	29.4	15.48	19.8	14.08
Poor suburbs (68)	15.8	5.78	47.8	10.74	21.5	9.26	14.9	7.67
Middle class suburbs (57)	17.6	6.97	45.3	11.66	20.6	8.63	16.5	7.57
Affluent suburbs (79)	20.3	7.08	43.2	14.11	19.8	9.45	16.7	6.61
Low density suburbs (90)	16.4	6.12	54.4	13.73	11.6	10.06	17.6	6.42
Overall (298)	**17.5**	**6.66**	**47.9**	**13.56**	**18.0**	**10.43**	**16.6**	**7.14**

Overall the shares of the various expenditure categories do not vary substantially across types of municipalities. In general redistributive expenditures cover the most important share of local government spending in all types of suburban municipalities. Its proportion amounts to about half of an average municipal government's total expenditures. Although variance across communal types is important *low density suburbs* often display the highest expenditure shares in this category. Shares of expenditure for amenities and other operational costs, general administration and developmental and capital expenditures are equally important. On average these categories cover about one sixth to one fifth of total spending each. Spending on general administration is on average less important in *poor suburbs* and *core cities* (15.8 and 15.0 % respectively) than in *middle class*, *affluent* and *low density suburbs* (17.6, 20.3 and 16.4 % respectively). In *core cities* a bit more is spent on developmental policies than in municipalities of the other types.
Comparing these results with the figures on redistributive spending there is an inverse pattern across types of municipalities. This suggests that there is a trade off between redistributive and developmental spending. Comparing expenditures for developmental and amenities policies one finds a negative correlation among the suburban types: Whereas *poor*, *middle class* and *affluent suburbs* spend less on developmental policies (14.9, 16.5 and 16.7 % respectively) than *low density suburbs* (17.6 %), they display higher proportions of expenditures for amenities (21.5, 20.6 and 19.8 % respectively) than *low density suburbs* (5.1 %). However, the highest proportion for spending on amenities and other operational costs can be found in core cities (29.4 %). A similar pattern is revealed by the figures on general administration and amenities expenditures: Whereas

core cities, *poor* and *middle class suburbs* spend less on general administration (15.0, 15.8 and 17.6 % respectively) than *affluent* and *low density suburbs* (20.3 and 16.4 % respectively) spending on amenities is more important in *core cities*, *poor* and *middle class suburbs* (29.4, 21.5 and 20.6 % respectively) than in *affluent* and *low density suburbs* (19.8 and 11.6 % respectively).

Municipalities in Swiss metropolitan areas display quite varied expenditure profiles. However, these expenditure profiles do not seem to be related to the socio-structural characteristics of these municipalities. Indeed, the share of redistributive expenditure is not substantially higher in poor suburbs or urban concentration - characterised by high levels of social hardship - compared to the other types of municipalities. Structural determinants do apparently play an only limited role for expenditure profiles of metropolitan municipalities in Switzerland.

Hence, it makes sense to look at other determinants, such as the political preferences of the municipal electorate. As we have shown elsewhere (Kübler et al., in press), the political ecology of Swiss metropolitan areas is spatially differentiated. First, an analysis of levels of turnout in local and national elections has revealed a tendency towards localisation of political behaviour as one moves from the core city to the periphery of a metropolitan area. Whereas the electorate in the core cities seems to be less locally oriented than in the suburban zones of a metropolitan area, local orientation of political behaviour is particularly strong in low density suburbs at the outskirts of a metropolitan area. Second, in terms of political preferences, the analysis of partisanship has yielded a threefold cleavage between leftist cosmopolitan core cities and nationalist conservative poor suburbs, while the voters living in the remaining middle class suburbs, affluent suburbs and low density suburbs more often lean towards right-wing liberalism. Following the party differentiation hypothesis (see Schmidt, 1993), we can assume that the political preferences found in a given municipality can have an effect on its policy profile, as measured by the share of expenditure categories. In particular, knowing the propensity of left parties for redistributive policies, we can expect that strong preferences for left parties in a municipality go along with high shares of redistributive expenditures.

A correlation analysis shows that there are indeed significant correlations between the left-right partisanship index at the municipal level on the one hand, and municipal expenditures in some of the categories (Table 10).

Table 10: Correlation (Pearson correlation coefficients) between partisanship indices and shares of communal expenditures in categories (partisanship data: mean for 1999 and 2003 elections; finance data for 2000)

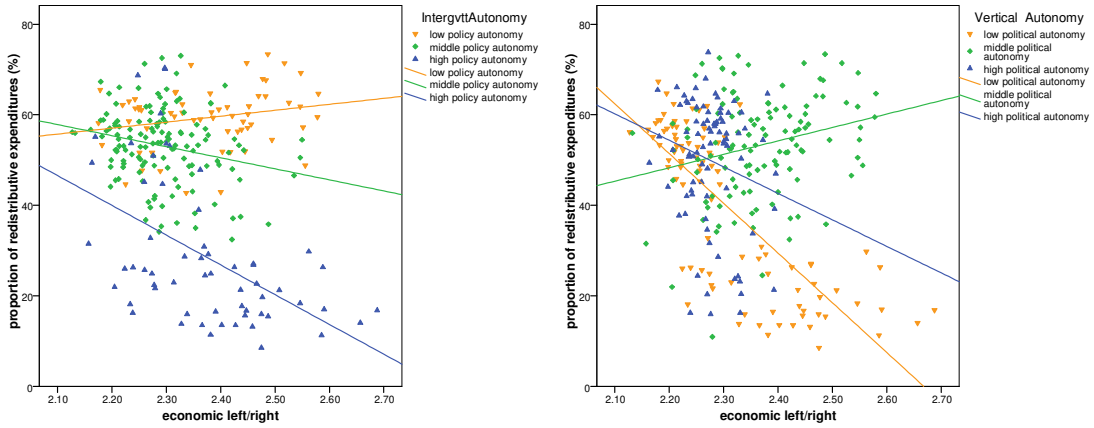
	General administration	Redistributive	Amenities and other operational costs	Developmental and capital expenditures
Economic left right index	0.317*	-0.242*	-0.150*	0.293*

* significant at p<0.01

In general, there is an overall relationship between political preferences for the left (low values of the economic left-right index) and high shares of redistributive expenditures at the municipal level. Similarly, left political preferences are correlated with expenditures for amenities, while general administration expenditures and developmental expenditures are associated with right political preferences. Partisanship in the metropolitan municipalities therefore appears to have an effect on policy preferences, particularly with respect to redistributive expenditures. However, knowing that partisanship in metropolitan municipalities interact with socio-demographic and place-related variables (Kübler et al., in press), it would be necessary to conduct multi-variate regression analyses in order to single out the influence of various determinants and to buttress the influence of partisanship. Problems of data availability data have, so far, only allowed partial such analyses which were inconclusive as yet (results not shown). For the moment, the question of how important the partisanship variable is with respect to other socio-structural variables for explaining redistributive expenditures in Swiss metropolitan municipalities must remain open.

In addition, it would be illogical if the partisanship effect was uniform across metropolitan area. In section 2 we have seen that the degree of municipal autonomy is very different across cantons (as far as vertical autonomy is concerned) and metropolitan areas (due to varying levels of intergovernmental cooperation)(Table 4). Municipal autonomy translates into the extent to which municipal governments can effectively translate their preferences into policy. Hence, we would expect that the effect of partisanship on municipal expenditure profiles is stronger when communal autonomy is high, respectively weaker when communal autonomy is low. Figure 2 presents the relationships between the value of the economic left-right partisanship index at the municipal level, and the share of redistributive expenditures in a municipal budget, differentiated by three levels of intergovernmental autonomy (left hand graph) and three levels of vertical autonomy (right hand graph).

Figure 2: Relationship between economic left-right partisanship and the share of redistributive expenditures in municipal budgets, according to levels of intergovernmental autonomy (left hand graph) and vertical autonomy (right hand graph)



The results show that the level of intergovernmental autonomy (inverse to the intensity of intermunicipal cooperation) has a strong and systematic effect on the relationship between partisanship and the share of redistributive expenditures in a municipality's budget. The more intense intermunicipal cooperation, the weaker this relationship. Vertical autonomy (i.e. decentralization of social policy) also plays a role. But this effect is less systematic: in weakly and strongly decentralized cantons, the relationship between partisanship and the share of redistributive expenditures is storng, in the intermediate category, it is weaker. Hence, we can say that, in the field of redistributive expenditures "politics matters" most in metropolitan areas where municipal autonomy is not hampered by horizontal entanglement. As a corollary, in metropolitan areas where communes are strongly involved in intergovernmental cooperation schemes, "politics does not matter" for the extent of redistributive expenditures at the communal level.

5 Conclusion

This paper has explored differences between metropolitan areas in Switzerland in terms of government policies to address social inequalities. We have seen that metropolitan areas differ greatly with respect to the "welfare regimes" that can be found in the larger cantonal context in which they are embedded. In addition, there is a broad array of "place equality regimes" that can be found across Swiss metropolitan areas, involving different combinations of fiscal equalization and social policies, ranging from rather centralized egalitarianism in Basle to local choice inegalitarianism in Zurich, to name but two examples.

Second, we have focused on municipal expenditures, using data that has not been available up to now. Based on the fivefold IMO-typology of metropolitan municipalities our analysis has revealed important differences at the level of municipal expenditures with respect to socio-structural disparities. Firstly, there are considerable differences between core cities and their suburbs as regards income and expenditures. Core cities gain and spend more per capita than the suburbs. Financial capacities of core cities are thus important, a situation that could help to alleviate trade offs between policy preferences. For instance core cities can afford to spend simultaneously on redistributive policies and development policies whereas suburban communes have to decide on priorities. Yet, more detailed data on expenditures of core cities is needed to test this hypothesis more accurately. In general, however, we have shown that redistributive expenditures are the most important category of municipal expenditures in Swiss metropolitan areas. The proportion equals around half of the total expenditures. In the Swiss context, we can therefore say that it makes perfect sense to focus on redistributive expenditures if we want to capture issues of metropolitan governance.

As regards the political variables the question outlined in the introduction was whether and how ideological differences are linked to the provision of public goods and services. Our bi-variate analysis suggested that there is indeed a link between political preferences and redistributive expenditures - albeit mediated by the level of communal autonomy. We find a strong correlation between inequality patterns in resident wealth on the one hand, and inequality patterns in municipal revenues and expenditures on the other hand. In poor suburbs, the low share of redistributive expenditures in the municipal budget is striking. Our evidence suggests that this situation is linked to the political ecology of the metropolis, where right-wing political preferences in poor suburbs lead to limited social policy engagement by the municipal government. Overall, however, more thorough analyses are needed to show to what extent socio-demographic and institutional factors leave room for political voluntarism.

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7. Methodological Appendix

Our analysis is based on communal data on socio-economic composition, spatial context, voting behavior and public finances covering the years 1990 and 2000, in the seven largest metropolitan areas in Switzerland – i.e. over or near 200'000 inhabitants according to the 2000 population census. The lion's share of data has been provided by the Swiss Federal Statistical Office and the Swiss Federal Tax Administration. Yet, data on local political variables as well as local public finance data are rarely centrally stored and had to be collected for the purpose of this paper. A request to provide local electoral as well as additional data on public finance was sent to all the 482 communes under scrutiny in this project. Data was delivered mostly on paper and had to be entered manually in the database.[11]

Table 11: Overall ranges of return rates of public finance data

	Communes (N)	Valid (N)	Return rate
Metropolitan area	**482**	**262 – 298**	**54 - 62 %**
Zurich	132	32 – 62	24 - 46 %
Basle	74	69 – 71	93 - 96 %
Geneva	74	74	100 %
Berne	43	2 – 6	5 - 14 %
Lausanne	70	70	100 %
Lucerne	17	15	88 %
Lugano	72	0 – 1	0– 1 %
Type of commune	**482**	**262 – 298**	**54 - 62 %**
Urban concentrations	7	3 – 4	43 - 57 %
Poor suburbs	119	59 – 68	50 - 57 %
Middle class suburbs	119	51 – 58	43 - 49 %
Affluent suburbs	119	69 – 79	58 - 66 %
Low density suburbs	118	78 – 90	66 - 76 %

[11] Data collection takes place in the context of a Research Seminar held by the authors at the University of Zurich. The authors are grateful to all the participants in the Research Seminar, and particularly to Philippe Rochat, for precious help in this herculean endeavour.

Data collection has not yet finished and the dataset is still fragmentary. Table 11 lists overall ranges of return rates as regards public finance data. The overview of the return rates gives an idea of possible biases. Whereas the metropolitan areas of Basle, Geneva and Lausanne generally display return rates of more than 80 percent there are no cases representing the metropolitan areas of Lucerne and Lugano. Especially in the case of the only Italian speaking metropolitan area of Lugano this is deplorable. The metropolitan areas of Zurich and Basle are represented by less than 20 percent valid cases. Note that range of return rates of metropolitan areas of Geneva and Lausanne goes from 0 to 100 percent. This is due to poor availability of appropriate expenditure data.

Table 12: Description of variables used (if not indicated all variables refer to year 2000)

Variable name	definition	missing values
commune-level variables		
Federal direct tax per capita (2000)	Total federal tax perceived in municipality / population size	0/482
Federal direct tax per capita (2008)	Total federal tax perceived in municipality / population siz	0/482
Total revenue per capita	total local revenue / population size	186/482
Total expenditure per capita	total local expenditure / population size	184/482
Transfer revenues	share of transfer payments revenue relative to total local revenue	217/482
Transfer expenditures	share of transfer payments expenditure relative to total local expenditure	220/482
Tax rate index	index: $100*(t_{ij}/\text{mean}(t_{ij}))$, where: t: tax rate i: commune subscript j: canton subscript	2001: 65/482
General administration expenditures	Sum of expenditures of the official functional categories - general administration	184/482
Redistributive expenditures	Sum of expenditures of the official functional categories - education - health - social welfare	184/482
Amenities and other operational costs	Sum of expenditures of the official functional categories - culture and leisure - environment and spatial planning - public safety	184/482
Developmental and capital expenditures	Sum of expenditures of the official functional categories - transport - economy	184/482
SES Hardship	summary index: $(100*(x_i-x_{min})/(x_{max}-x_{min}))/5$, where: x_1: proportion of people with low socio-economic status x_2: proportion of unemployed people x_3: proportion of people with low education profile x_4 proportion of people in residences where number of rooms is smaller than number of occupants x_5: proportion of retired people	0/482
SES Generally	summary index: $(100*(x_i-x_{min})/(x_{max}-x_{min}))/3$, where: x_1: proportion of people with university degree x_2: median income x_3: proportion of heads of household with higher education (higher professional education, applied sciences university, university)	0/482
Intergovernmental autonomy	Sum of standardised total transfer payments per capita and the standardised total transfer payments by sum of revenues and expenditures	222/482
Distance to the centre	geographic distance from a commune's centre to the centre of metropolitan area's core city in metres: $\text{sqrt}((x_1-x_2)^2*(y_1-y_2)^2)$, where x and y indicate coordinates of geographic centres	5/482
New housing	proportion of dwelling houses built during the last 20 years (without renovations)	0/482
Mean left/right position (ideological centre of gravity ICG)	(see below operationalization), average of the National Council elections 1999/2003	0/482

Table 21 (continued) : Description of variables used (if not indicated all variables refer to year 2000)

Variable name	definition	missing values
MA-level variables		
Gini coefficient	$G = \left\| 1 - \sum_{k=1}^{n-1} (X_{k+1} - X_k)(Y_{k+1} + Y_k) \right\|$ where: G: Gini coefficient X: cumulative percentage of population Y: cumulative percentage of either total expenditures, total revenues or redistributive expenditure per capita	5/7
Metropolitan population	population size of metropolitan area	0/7
Fragmentation (Zeigler-Brunn)	number of communes per 10,000 inhabitants divided by the central city's share of the overall metropolitan population in percent	0/7
Canton-level variables		
Vertical autonomy	Sum of standardised perceived autonomy (Ladner 2005) and standardised share of communal public expenditures (Badac)	0/7

Sources:
- coordinates of the communes' geographical centres: Institute for Transport Planning and Systems (ETH Zurich)
- median income: Federal Tax Administration
- local public finance data: statistical offices and finance administrations of cantons and communes
- all other data: Swiss Federal Statistical Office:

Ideological Centre of Gravity (Gross and Sigelmann, 1984: 467)

$$ICG = \sum_{p=1}^{P} \left(pos_p * v_p \right) ,$$

where

ICG: ideological centre of gravity

pos: party's ideological position

v: party's vote share

p: party subscript